

DETAILED DESCRIPTION

Referring now to FIG. 4, shown there is a touch screen device 40, which may comprise or be included as a part of a business terminal, comprising a bezel 42 and a touch screen 44, which is normally transparent to permit viewing of a display positioned beneath it. The bezel 42 includes an aperture 46 through which the touch screen 44 is accessible. Located beneath the touch screen 44 and not visible in FIG. 4 is a display 48 (FIG. 5), which typically may be a liquid crystal display (LCD). The internal structure of the device 40 is shown in FIG. 5, which is a partial sectional view taken along line 5—5 of FIG. 4.

As shown in FIG. 5, the touch screen 44 is held in position in the interior of the device 40 by being placed between two shield elements, namely a touch screen top shield 50 (FIG. 6) and a touch screen holder shield 52 (FIG. 7). The shields may be made of any suitable conductive relatively rigid metal, such as aluminum or steel, and will most commonly be fabricated in a stamping operation. The touch screen holder shield 52 has an indented portion 54 to receive and retain in position the touch screen 44.

After the touch screen 44 has been inserted between them, the two shields 50 and 52 are held together by a plurality of studs, screws or other suitable fasteners 56, which also secure the assembled shields and touch screen to the bezel 42. The fasteners 56 extend through matching apertures 58 and 60 in the shields 50 and 52, respectively.

As shown most clearly in FIGS. 6 and 7, the two shields 50 and 52 are also provided with large central apertures 62 and 64, respectively. The aperture 62 provides access by a user to the touch screen 44, to enable it to be touched or otherwise written upon for the purpose of data entry. The aperture 64 in the shield 52 enables the display 48 to be seen from the exterior of the touch screen device 40 through the transparent touch screen 44. The display 48 is retained in operative relation to the touch screen 44 by a plurality of screws or other fasteners 66 made of suitable non-conducting material which extend through apertures in the display 48 and through apertures 68 in the touch screen holder shield 52. A rectangular insulating sheet 70 with a suitable rectangular aperture 72 is positioned between the shield 52 and the display 48 to provide the necessary electrical insulation between the shield and the display, and is provided with apertures through which the fasteners 66 extend.

The entire assembly of the shields 50 and 52, together with the touch screen 44, is driven with an electrical signal applied to the assembly. Insulated bushings and foam tape may also be used to keep the bracket or shield assembly from grounding the display 48. It will be seen that the shielding bracket comprising the shields 50 and 52 provides a full 180 degree shielding surface to prevent the capacitance of a user's hand resting on the side of the bezel from interfering with the touch screen 44, on the top, bottom or edge surfaces.

Although the invention has been described with particular reference to a preferred embodiment thereof, variations and modifications of the present invention can be effected within the spirit and scope of the following claims.

What is claimed is:

1. A capacitive touch screen shield, comprising:

a first shield element of rigid conductive material, having an upper surface and a lower surface, also having a central opening through which a touch screen positioned beneath the shield element is accessible, and having a peripheral portion which extends past the outer edges of the touch screen; and

a second shield element of rigid conductive material which is located beneath the touch screen and supports the touch screen, the second shield element including an upturned portion which shields the edges of the touch screen, the second shield element having a flange portion extending outwardly of the upturned portion in a plane parallel to a plane through the first shield element for securing the second shield element to the lower surface of the first shield element.

2. The capacitive touch screen shield of claim 1, in which the first and second shield elements are generally rectangular in configuration.

3. The capacitive touch screen shield of claim 1, in which the second shield element has a central opening.

4. The capacitive touch screen shield of claim 3, in which said second shield element includes at least one mounting device for mounting a display.

5. The capacitive touch screen shield of claim 1, in which the first and second shield elements are aluminum.

6. The capacitive touch screen shield of claim 1, in which the first and second shield elements are steel.

7. The capacitive touch screen shield of claim 1, in which the first and second shield elements have the same external dimensions.

8. The capacitive touch screen shield of claim 3, in which the central openings of the first and second shield elements have the same dimensions.

9. The capacitive touch screen shield of claim 1, in which the second shield element is secured to the first shield element by a plurality of fasteners.

10. The capacitive touch screen shield of claim 9, in which said fasteners comprise screws which engage apertures in the first and second shield elements.

11. A touch screen device, comprising:

a top shield of conductive material of generally rectangular configuration, having an upper surface and a lower surface, and also having a central opening through which a touch screen positioned beneath the top shield is accessible;

a touch screen holder shield of conductive material having an upper surface and a lower surface, also having an indented portion for receiving and retaining a touch screen and a flange portion extending outwardly of the indented portion and in a plane defined by said upper surface, and a central opening in the indented portion through which a display positioned below the indented portion is visible, the flange portion of the holder shield being secured to the top shield;

a transparent touch screen located in the indented portion of the holder shield;

a bezel surrounding the peripheries of the top shield and the holder shield; and

a display positioned beneath the holder shield and secured to the holder shield.

12. The touch screen device of claim 11, in which the top shield and the touch screen holder shield have the same external rectangular dimensions.

13. The touch screen device of claim 11, in which the central openings of the top shield and the touch screen holder shield have the same rectangular dimensions.

14. The touch screen device of claim 11, also including an insulating member located between the touch screen holder shield and the display.

15. The touch screen device of claim 14, also including a plurality of non-conducting fasteners for securing the display and the insulating member to the touch screen holder shield.